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North America, and for a long series of years a great deal must remain almost untouched in Asia, Africa, South America, and in the islands of the Pacific ocean. If, in the far future, the day should come when such work shall be undertaken, the process of doing so must necessarily be slow, partly for want of proper maps, and possibly in some regions partly for the want of trained geologists. Palæontologists must always have ample work in the discovery and description of new fossils, marine, fresh-water, and truly terrestial; and besides common stratigraphical geology, geologists have still an ample field before them in working out many of those physical problems which form the true basis of physical geography in every region of the earth. Of the history of the earth there is a long past, the early chapters of which seem to be lost forever, and we know little of the future except that it appears that "the stir of this dim spot which men call earth," as far as geology is concerned, shows "no sign of an end."

MINERALOGY.[1]

PHYTOCOLLITE, A NEW MINERAL FROM SCRANTON, PA.—This name has been given[2] to a very curious, jelly-like mineral recently found near the bottom of a peat bog at Scranton, Pa. An excavation for a new court-house had cut through a peat bog, below which was a deposit of glacial till. Near the bottom of the bog, in a carbonaceous mud, or "swamp muck," there occur irregular veins, of varying thickness and inclination filled with a black, homogeneous jelly-like substance, elastic to the touch. This substance becomes tougher on exposure to the air, and finally becomes as hard as coal. When thus dried, it is brittle, has a conchoidal fracture and brilliant lustre, and closely resembles jet. It is nearly insoluble in alcohol and ether, but is entirely soluble in caustic potash, forming a deep reddish-brown solution, from whence it can be again precipitated on the addition of an acid. It has a specific gravity of 1.032 and burns with a bright flame. After having been dried at 212°, it has the following composition, according to the analysis of J. M. Stinson:

C	28.989
H	5.172
N	2.456
O	56.983
Ash	6.400
	100.

or without Ash	
C	30.971
H	5.526
O + N	63.503
	100.

yielding the empirical formula $C_{10} H_{22} O_{16}$.

In its mode of occurrence and in general appearance, this substance closely resembles Dopplerite, but differs from that mineral in burning with flame and in its composition. Another jelly-like substance from a Swiss peat bog, differing both from Dopplerite and from the Scranton mineral has been described by Diecke.

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[1] Edited by Professor HENRY CARVILL LEWIS, Academy of Natural Sciences, Philadelphia, to whom communications, papers for review, etc., should be sent.

[2] H. C. Lewis, Proc. Amer. Philos. Soc., Dec. 2, 1881.

It is now proposed to group all these jelly-like minerals, produced by the decomposition of vegetable matter, under the one generic name of *Phytocollite* (φυτόν, κόλλα = "plant-jelly") of which the three minerals now known would be varieties.

Special interest is attached to these substances, in that they illustrate the first step in the transformation of peat into coal.

COSSYRITE.—Förstner[1] has given this name to a hornblendic mineral which abounds in the igneous rocks of the Lipari islands. It occurs in triclinic crystals closely approaching monoclinic forms. It has an easy cleavage in two directions, the included angle being 65° 51′. Spec. grav. 3.75. It has the following composition.

SiO^2	Fe^2O^3	Al^2O^3	FeO	MnO	CuO	CaO	MgO	Na^2O	K^2O
43.55	7.97	4.96	32.87	1.98	.39	2.01	.86	5.29	.33

Before the blowpipe it melts readily to a brownish-black glassy slag. It is partially decomposed by acids. It appears to be a variety of iron amphibole.

ALASKAITE.—A new sulphide of bismuth and lead from Alaska mine, Colorado, has been described by Dr. G. A. König.[2] It occurs as a pale lead-gray mineral of scaly structure and metallic lustre, which forms a more or less intimate mixture with quartz, barite, chalcopyrite, etc. It is soft, and has a spec. grav. of 6.878. In the closed tube it decrepitates and fuses. On charcoal gives characteristic coatings. It is soluble in sulphuric acid. It has the following composition:

Bi	Pb	Ag	Cu	Fe	Zn	S	Ba
51.35	17.51	3.	5.38	1.43	.20	17.85	2.83

The formula given is (Pb, Zn, $\overset{II}{Ag_2}$, $\overset{II}{Cu_2}$) S + $(Bi\ Sb)^2\ S^3$.

PSEUDOMORPHS OF COPPER AFTER ARAGONITE.—Domeyko has described some interesting cases of pseudomorphism of copper after aragonite observed in some Bolivian mines. He found hemitropic crystals of aragonite presenting all degrees of transformation into metallic copper, and showing every transition from crystals of pure aragonite to those of pure copper.

ELECTRICITY DEVELOPED BY THE COMPRESSION OF CRYSTALS.—Jacques and Curie[3] have shown that by the mere compression of an inclined hemihedral crystal, electricity is developed. They experimented by placing a crystal or a suitable section of it between two sheets of tinfoil insulated on the exterior by plates of caoutchouc, the tin foil being connected to a galvanometer. By now compressing the crystal in a vise or otherwise, electricity is developed and may be measured by the galvanometer. The electricity developed is the opposite of that produced by heating a crystal,—that is to say, the extremity of the crystal which becomes positive on heating, becomes negative on compression. On releasing the pressure, electricity of an opposite kind is produced. The authors find that the production of electricity by pressure can only be obtained with hemihedral crystals having inclined faces. By combining a number of such crystals in a pile, they have invented a new apparatus for producing electricity. The amount of electricity developed varies for different minerals. They find, for example, that a section of quartz, cut perpendicular to the main axis, evolves more electricity than a similar section of tourmaline.

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[1] Zeits. f. Kryst., v, 1881, p. 348.

[2] Zeits. f. Kryst., 1881, vi, 42.

[3] Bull. Soc. Min. de France, 1880, 93. Comp. Rend., 1881. iv, 186, and vii, 250.

NOTE ON GOLD.—There is a simple method for the detection of gold in quartz, pyrite, etc., which is not generally described in the mineralogical text-books. It is an adaptation of the well-known amalgamation process, and serves to detect very minute traces of gold.

Place the finely powdered and roasted mineral in a test tube, add water and a single drop of mercury; close the test tube with the thumb and shake thoroughly and for some time. Decant the water, add more and decant repeatedly, thus washing the drop of mercury until it is perfectly clean. The drop of mercury contains any gold that may have been present. It is therefore placed in a small porcelain capsule and heated until the mercury is volatilized and the residue of gold is left in the bottom of the capsule. This residue may be tested either by dissolving in aqua regia and obtaining the purple of Cassius with protochloride of tin, or by taking up with a fragment of moist filter paper, and then fusing to a globule on charcoal in the blowpipe flame.

It is being shown that gold is much more universally distributed than was formerly supposed. It has recently been found in Fulton and Saratoga counties, New York, where it occurs in pyrite. It has also been discovered in the gravel of Chester creek, at Lenni, Delaware county, Penna. In one of the Virginia gold mines wonderful richness is reported, $160,000 worth of pure gold having been taken from a space of three square feet.

A NEW TEXTBOOK OF MINERALOGY.—The mineralogists of Germany are fortunate in possessing a new and valuable work on mineralogy by Professor G. Tschermak. This work, the first volume of which has recently appeared, contains a full description of the physical, optical and crystallographic characters of minerals, and of the various delicate means of investigation at the command of modern mineralogists. Under the head of physical mineralogy an account is given of the latest discoveries in elasticity and cohesion. Among the optical characters of minerals described are double refraction, phenomena of thin plates, interference figures, optic axial divergence and method of measurement, determination of the plane of polarization, circular polarization, pleochrism, theoretical explanation of the characters of uniaxial and biaxial crystals, etc.

It is to be hoped that this work may be translated into English for the benefit of the many students who feel the need of some such advanced textbook.

MINERALOGICAL NEWS.—It is stated that Mt. Mica, Maine, has been purchased by a mining company and is being worked for tourmaline, cassiterite and mica. This locality has yielded a large number of interesting minerals, and has been especially famous for its beautifully colored tourmalines.——*Monazite* has been found as minute tubular crystals, less than a millimeter in diameter, at Nil St. Vincent, near Brussels. It occurs in a crystalline schist associated with rutile, tourmaline and zircon.——The great beds of nitrate of soda which occur in the desert of Atacama, Chili, have been derived from the decomposition of underlying felspathic rocks.——*Vasite* is an altered orthite found near Stockholm.——It has been proved that the jade or nephrite of Siberia, like that of China, is a compact variety of tremolite.——An excellent method of separating from one another the minerals composing a rock, is to immerse the crushed rock in a very dense liquid of known specific gravity. The specific gravity of most of the minerals constituting rocks being between 2.2 and 3, it results that by preparing a liquid whose density may be made to vary between those limits, the minerals may be readily separated. Such a liquid is a solution of iodide of mercury in iodide of potassium. A solution of borotungstate of sodium may also be employed, the latter having a specific gravity of about 3.——*Native lead* has been found in Idaho.——*Fahlunite* occurs at McKinney's Quarry, Germantown, Penna.——*Vermiculite* occurs in Japan. It is in short six sided prisms of a brownish color. When thrown upon hot charcoal, it expands longitudinally to many times its original length, twisting and writhing like a serpent, and is shown to passing travelers as a local wonder. It is also used as a medicine. In many of its characters it is similar to the variety known as *Philadelphite*.——Out of 200 columns of *Basalt* from the Giants Causeway, recently measured, there were tetragons 3 per cent., pentagons 25 per cent., hexagons 50 per cent., heptagons 19 per cent., octagons 2 per cent.——Microscopic investigations have revealed frequent impurities in the *diamond*. Organic matter, carbon and bubbles of gas are common impurities. Quartz, chlorite, pyrite and hematite have recently been found inclosed in diamonds. Small crystals of topaz have also been seen within diamonds.——Cossa has shown that all *apatite* contains phosphate of cerium, lanthanum and didymium united with phosphate of lime, and that there is no such mineral as cryptolite. The rare earths were recognized by means of spectral analysis and are present in all apatite. Their presence in the Canadian apatite has also been proved by chemical analysis.

GEOGRAPHY AND TRAVELS.[1]

THE JEANNETTE AND THE SEARCH EXPEDITIONS.—A portion of the crew of the *Jeannette* arrived in two boats at the mouth of the Lena about the 17th of September last. They report that their vessel was crushed in the ice on June 23, 1881, in N. lat. 77° 15′ E. long. 157°, about one hundred and fifty miles northeast of the New Siberian Islands. It appears that the *Jeannette* was caught in the pack on October 1, 1879, and drifted with the winds and currents up to the time she was abandoned.

From the Report of Captain C. L. Hooper we learn that the U. S. revenue steamer *Corwin*[2] sailed from St. Michaels on July 9th 1881. She reached Herald Island on July 30th, and, a landing being effected, a thorough exploration of the island was made. The cliffs which render it almost inaccessible are about 1200 feet high. After much difficulty with the ice Capt. Hooper succeeded in reaching Wrangell Land, off the mouth of a river. The landing was made at about the locality where the supposed Plover Island has generally been designated on the maps and is in latitude 71° 4′ N. and longitude 177° 40′ W. and is the most eastern part of Wrangell Land. It is forty-five miles from Herald Island and in clear weather is in plain sight from it. Wrangell Land was taken possession of in the name of the United States and re-named "New Columbia." No snow was found in the lowlands or hills though remains of very heavy drifts were observed on the distant mountains. The river was named Clark; it was seventy-five yards broad and twelve feet deep. The party proceeded four miles inland and from a high hill traced the course of the river northwards for about forty miles. Over twenty species of Arctic plants were found in bloom. Capt. Hooper believes that the sea between Herald Island and Wrangell Land is almost always closed; the water is shallow and solid ice appears to remain constantly frozen to the bottom. The *Corwin* next visited Point Barrow which was found to be clear of ice. She arrived at Plover Bay on August 4th, finding the *Golden Fleece* there. After an unsuccessful attempt to revisit Herald Island and Wrangell Land the *Corwin* left the Arctic Sea on September 14th, and reached San Francisco on the 22d of October.

The U. S. steamer *Rodgers* reached Plover Bay about August 14th and arrived at Herald Island on August 24th, where a landing was made. The south coast of Wrangell Land was reached after passing throught about twelve miles of loose ice on

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[1] Edited by ELLIS H. YARNALL, Philadelphia.

[2] The name of this vessel is *Corwin* not Thomas Corwin.